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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Mohamed Khalil

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EXAMINER

WONG, BLANCHE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/712,879	Applicant(s) KHALIL ET AL.	
	Examiner Blanche Wong	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-7 and 16-20 have been considered but are moot in view of the new ground(s) of rejection.
2. The allowability of claims 8-15 has been withdrawn.

Specification

3. The abstract of the disclosure is objected to because it does not reflect the invention nor show "the gist of the technical disclosure". Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claim 8 is objected to because of the following informalities:

Examiner suggests replacing "a foreign network" in line 13 with "the foreign network" in consistent with "a foreign network" in line 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 8-10** are rejected under 35 U.S.C. 102(e) as being anticipated by Iyer (Pub No. 2004/0073642).

With regard to claim 8, Iyer discloses

a foreign network (**external network 15, para. [0021]**) coupled to a mobile node (**MN 13**) associated with a virtual private network (**Fig. 1**) (**See Also right-hand side of Outer Firewall 9**) and having a public home address (**outer IP address, para. [0022]**);

a virtual private network gateway (**VPN Gateway 11**) receiving information packets entering and leaving the virtual private network, with a virtual private network tunnel inner address (**VPN tunnel inner address, para. [0025]**) used for routing packets to the virtual private network gateway transmitted from nodes within the virtual private network and a virtual private network gateway address (**the inner IP address, the outer IP address, para. [0022]**) used for routing packets to the virtual private network gateway transmitted from at least one mobile node (**MN 13**) located outside the virtual private network on the foreign network (**external network 15, para. [0021]**);

the mobile node location on the foreign network is designated by a care-of address (**point-of-attachment care-of address, para. [0022]**); and

the virtual private network tunnel inner address (**VPN tunnel inner address, para. [0025]**) and virtual private network gateway address (**outer IP address, para.**

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[0022]) being sufficient for tunneling information packets to and within said virtual private network.

With regard to claims 9 and 10, Iyer further discloses care-of address for the mobile node (**point-of-attachment care-of address, para. [0022]**).

With regard to claim 12, Iyer further discloses a virtual private network tunnel inner address (**VPN tunnel inner address, para. [0025]**).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-3,5-7,11,13-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer in view of Vaarala et al. (Pub No. US 2005/0177722).

With regard to claim 1, Iyer discloses

a virtual private network (**Fig. 1**) (**See Also right-hand side of Outer Firewall 9**) having a security gateway (**VPN Gateway 11**) and a home agent (**Home Agent 7, para. [0015]**), wherein said mobile node (**MN 13**) is connected to a foreign network (**external network 15, para. [0021]**) and information packets are transmitted to the mobile node

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from the virtual private network (**“the communciaiton between the MN 13 and the LAN ...”, para. [0020]**), and wherein said security gateway on the virtual private network is connected to said home agent (**See Fig. 1**), said security gateway having an inner tunnel address for routing packets within the virtual private network (**VPN tunnel inner address, para. [0025]**); and

a correspondence node (**CN 8**) located on the virtual private network (**Fig. 1**) (**See A/so right-hand side of Outer Firewall 9**) and coupled to said home agent on the virtual private network (**See Fig. 1**), wherein an information packet transmitted from the correspondence node is encapsulated by the home agent (**See arrow from CN to HA**), said encapsulated information packet is transmitted to the security gateway using the inner tunnel address and said security gateway transmits the encapsulated information packet to the mobile node (**“... VPN tunnel inner address ... In this way, the VPN tunnel, once established does not have to change ... each time the actual point-of-attachment IP address 31,32 changes ... to send packets through any network.”, para. [0025]**).

However, Iyer fails to explicitly show that an encapsulated information packet.

In an analogous art of mobile IP, Vaarala discloses an encapsulated information packet (**[tunnel mode] ... the original packet is encapsulated, para. [0014]**).

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine an encapsulated packet as taught in Vaarala with Iyer for the benefit of implementing a secure connection. Vaarala, para. [0001].

With regard to claims 2 and 3, the combination of Iyer and Vaarala discloses the packet-based wireless communication system for communicating with a mobile node of claim 1.

Vaarala further discloses a security gateway encrypts **(encrypt) (IPsec can encrypt and/or authenticate traffic, para. [0006])** the information packet.

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine encryption as taught in Vaarala with Iyer for the benefit of implementing a secure connection. Vaarala, para. [0001].

With regard to claim 5, the combination of Iyer and Vaarala discloses the packet-based wireless communication system for communicating with a mobile node of claim 1.

Vaarala further discloses an information packet that includes an address for the security gateway **(see IPSec in packet in Fig. 2)**.

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine an address for the security gateway as taught in Vaarala with Iyer for the benefit of implementing a secure connection. Vaarala, para. [0001].

With regard to claim 6, Iyer further discloses a virtual private network inner tunnel address **(VPN tunnel inner address, para. [0025])**

With regard to claim 7, Iyer further discloses a security gateway that transmits the information packet to the home agent to forward outside the virtual private network to the mobile node **(See Fig. 1)**.

With regard to claim 11, Iyer discloses the wireless communication system utilizing an information packet transmitted in a packet-based communication of claim 8. However, Iyer fails to explicitly show encrypting the information packet.

In an analogous art of mobile IP, Vaarala discloses encrypting **(encrypt) (IPsec can encrypt and/or authenticate traffic, para. [0006])** the information packet.

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine encryption as taught in Vaarala with Iyer for the benefit of implementing a secure connection. Vaarala, para. [0001].

With regard to claims 13-15, Iyer discloses the wireless communication system utilizing an information packet transmitted in a packet-based communication of claim 8. However, Iyer fails to explicitly show appending addresses to the information packet.

In an analogous art of mobile IP, Vaarala discloses appending addresses to the information packet **(IP|ESP|IP|Payload, para. [0014]) (See A/so Fig. 2)**.

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine appending addresses to the information packet as taught in Vaarala with Iyer for the benefit of implementing a secure connection. Vaarala, para. [0001].

9. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer and Vaarala as applied to claim 1 above, and further in view of O'Neill (Pub No. US2004/0047322).

With regard to claim 4, the combination of Iyer and Vaarala discloses the packet-based wireless communication system for communicating with a mobile node of claim 1. However, the combination fails to explicitly show that a communication system that does not use an external home agent for forwarding the information packet to the mobile node.

In an analogous art of mobile IP, O'Neill further discloses a communication system that does not use an external home agent for forwarding the information packet to the mobile node (**PCCoA functionality is provided between the end node and the access node, does not need the assistance of the Home Agent to invoke that functionality, para. [0044]**).

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine a communication system that does not use an external home agent for forwarding the information packet to the mobile node as taught in O'Neill with Iyer and Vaarala for the benefit of support encapsulation and tunneling between network domains which use different address prefixes. O'Neill, para. [0002].

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10. **Claims 16-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neill in view of Iyer and Vaarala.

With regard to claim 16, O'Neill discloses a mobile IP network (**Fig. 5**) providing a virtual private network associated with a mobile node (**end nodes 502,504 in Fig. 5, para. [0045]**) connected to a foreign network (**communication cells 501 in Fig. 5, para. [0045]**);

forming an information packet (**data**) a correspondence node (**CN**) on the virtual private network for transmission (**session**) to the mobile node (**end node N 504**) (**CN 542 operates as corresponding node in a data session with at least end node N 504, para. [0046]**); and

forwarding the information packet (**PCCoA – Proxy Colocate Care of Address**) to the mobile node without using an external home agent (**PCCoA functionality is provided between the end node and the access node, does not need the assistance of the Home Agent to invoke that functionality, para. [0044]**).

However, O'Neill fails to explicitly show providing a security gateway located on the virtual private network and connected to a home agent and the correspondence node connected to said foreign network, said security gateway on the virtual private network being designated with a gateway address for routing information packets to the virtual private network and having an inner tunnel address for routing information packets within the virtual private network; transmitting the information packet to the

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security gateway using said inner tunnel address to route said information packet within the virtual private network to the security gateway; and encapsulating the information packet at the security gateway.

In an analogous art of mobile IP, Iyer discloses

a security gateway (**VPN Gateway 11**) located on the virtual private network (**Fig. 1**) (**See A/so right-hand side of Outer Firewall 9**) and connected to a home agent (**Home Agent 7, para. [0015]**) and the correspondence node (**CN 8**) connected to said foreign network (**external network 15, para. [0021]**),

said security gateway on the virtual private network having an inner tunnel address (**VPN tunnel inner address**) for routing information packets within the virtual private network ("**... VPN tunnel inner address ... In this way, the VPN tunnel, once established does not have to change ... each time the actual point-of-attachment IP address 31,32 changes ... to send packets through any network.**", para. [0025]);

transmitting the information packet to the security gateway using said inner tunnel address to route said information packet within the virtual private network to the security gateway ("**... VPN tunnel inner address ... In this way, the VPN tunnel, once established does not have to change ... each time the actual point-of-attachment IP address 31,32 changes ... to send packets through any network.**", para. [0025]).

Vaarala discloses said security gateway (**SGW**)("**packet routed from the originating host to a security gateway SGW**", para. [0015]) on the virtual private network being designated with a gateway address for routing information packets to the

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virtual private network (**see IPsec in packet in Fig. 2**) and encapsulating the information packet (**[tunnel mode] ... the original packet is encapsulated, para. [0014]**).

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine providing a security gateway located on the virtual private network and connected to a home agent and the correspondence node connected to said foreign network, said security gateway on the virtual private network being designated with a gateway address for routing information packets to the virtual private network and having an inner tunnel address for routing information packets within the virtual private network; transmitting the information packet to the security gateway using said inner tunnel address to route said information packet within the virtual private network to the security gateway; and encapsulating the information packet at the security gateway as taught by either Iyer or Vaarala, with O'Neill, for the benefit of implement a more secure communication.

With regard to claim 17, the combination of O'Neill, Iyer and Vaarala discloses the method of packet-based communication to a mobile node from a correspondence node on a virtual private network of claim 16.

Vaarala further discloses encrypting (**encrypt, para. [0006]**) an encapsulated information packet at the security gateway prior to transmitting said packet to the mobile node.

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At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine encryption at the security gateway as taught in Vaarala with O'Neill and Iyer for the benefit of implementing a secure connection.

With regard to claim 18, the combination of O'Neill, Iyer and Vaarala discloses the method of packet-based communication to a mobile node from a correspondence node on a virtual private network of claim 16.

Iyer further discloses encapsulating the information packet at the home agent with the inner tunnel address to allow the correspondence node on the virtual private network to route packets to the security gateway ("**... VPN tunnel inner address ... In this way, the VPN tunnel, once established does not have to change ... each time the actual point-of-attachment IP address 31,32 changes ... to send packets through any network.**", para. [0025]).

At the time of the invention, it would have been obvious to a person of ordinary skills in the art to combine encapsulating the information packet at the home agent with the inner tunnel address to allow the correspondence node on the virtual private network to route packets to the security gateway as taught in Iyer, with O'Neill and Vaarala, for the benefit of implementing a secure connection.

With regard to claim 19, O'Neill further discloses transmitting the information packet out of the virtual private network from the home agent (**forward direction, para. [0049]**).

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With regard to claim 20, O'Neill further discloses
transmitting the information packet out of the virtual private network from the
security gateway (**incoming direction, para. [0049]**).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/
Examiner, Art Unit 2419
May 5, 2009

/Salman Ahmed/

Examiner, Art Unit 2419